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This economic picture indicates that from early childhood, women had engaged in such physical labor that by 18 years of age they had strong muscles and backs through lifting, stooping, and squatting. Since to stop work during pregnancy was construed as laziness, women worked vigorously up to the day of delivery. If a woman were delivered during one of the hectic seasons, she might shorten her post-natal rest to whatever she thought was a safe minimum.

Marriage

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As people of the community often met at the temple, at ceremonies, and at work parties, there too young people met. Unmarried girls went freely and often alone on duties about the community, and also to Minburi to sell vegetables or take a load of paddy to the mill. To temple fairs and such they went in groups. Though parents hoped their children would marry within the community, a few young people "married out."

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Girls were married between 17 and 27 or so, most frequently around 21 to 23. Since boys at 21 might have to serve 2 years in the army, and were urged to spend as well at least a few months in the priesthood, their marriages took place between 22 and 30, most often around 24 or so. Parents were in no hurry to marry off their grown children at the very age when their productivity was funneling wealth back into the family. However, if male help in the family were short, parents were more receptive to suitors. No girl was married against her wishes nor to a stranger.[a] Marriages might be arranged through formal conversations opened by the man's family and carried on through a go-between, but the girl had the final say. A secret agreement between the partners might even precede negotiations. About half of the marriages were elopements, sometimes arranged because negotiations were dragging, sometimes to avoid the higher costs of more formal arrangements. Marriage, though largely based on socio-economic factors (Phillips:62) was not devoid of personal esteem. Sharp (Bang Chan data at Cornell) has a note on the desirable qualities in a husband as viewed by women. "Sexual virility," last on the list, was minimized in relation to such qualities as "religiousness," "wealth," "industriousness," which headed the list.

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a. A person who uses magical means to force an unwilling woman's love "will be born 100 times as a mad dog."

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BANG CHAN

chewing, the extent to which the betel leaves and areca nuts are associated with festival occasions must be taken into consideration. Betel chewing was forbidden in Thailand by the Thai government but the enforcement of this regulation proved impossible and it has been forgotten since World War II.

Nutritional Status

Incidence of Anemia. - Hemoglobin was determined by means of a Spencer Hb-meter. About 9% of the school children had hemoglobin values below 11.5 g. per 100 ml. but one value only was below 9.75 g. (Table 8). As might be expected since none of the girls in the primary school had passed the menarche, no difference was apparent between values for boys and girls.

Table 8

Hemoglobin Values of 233 Children, Ages 7-14, in the Bang Chan Primary School, 1952-53

	Number of Children	Hemoglobin, grams per 100 ml.					
		Under 9.75	9.75-11.5	11.75-12.5	12.75-13.5	Over 13.5	Not Ascertained
Boys	121	0	10	32	44	33	2
Girls	112	1	10	25	38	37	1
Total	233	1	20	57	82	70	3

In the group of persons 15 years and older, in the random sample of village households, the usual difference in hemoglobin values between males and females is evident (Table 9). About 6% of the males and 25% of the females had hemoglobin values of 11.5 g. or less/100 ml. with one only below 9.75 g. Many of these might be considered as borderline rather than anemic.

[see p.25 - Analyst]

BANG CHAN

Table 9

147 Hemoglobin Values of 104 Residents, Age 15 and Older, in Random Sample, Bang Chan, 1952-53

	Number of Persons	Hemoglobin, grams per 100 ml.					
		Under 9.75	9.75-11.5	11.75-12.5	12.75-13.5	Over 13.5	Not Ascertained
Male	48	0	3	7	9	28	1
Female	56	1	13	10	14	11	7
Total	104	1	16	17	23	39	8

146 125 Occurrence of Possible Signs of Malnutrition. - Most of the signs and symptoms included on the schedule for clinical examination were those known to be of value in the assessment of nutritional status (Joint FAO/WHO Expert Committee on Nutrition, 1951). Some items included need to be investigated more fully before their value can be determined. Among the 146 items on the schedule, (Appendix A) the following were not 164 observed in any of the persons examined:

Eyes: photophobia, lachrymation, blepharitis, xerophthalmia, Bitot's spots, gross corneal vascularization.

Face: Folliculosis, nasolabial seborrhea, dyssebacia, suborbital pigmentation.

Lips: Scars of cheilosis and of angular stomatitis.

Tongue: Edema, color change to scarlet or magenta. (In 30 adults, however, such color changes if present would have been obscured by the discoloration from betel chewing.)

Gums: Retraction, loss of interdental papillae.

Parotid glands: Enlargement.

Skin: Perifollicular congestion, petechiae.

Edema

Calf tenderness

Inability to rise from squatting A2 [see p. 51-Analyst]

BANG CHAN

not recall the age at menarche.

The median and modal reported age at menarche was 15 years, with a range from 13-19 years (Table 11).

Table 11

Reported Age at Menarche of 54 Females in Bang Chan.

	Age in Years						
	13	14	15	16	17	18	19
Number at each age	6	18	34	21	8	4	3
Percentage at each age	6	19	36	22	9	4	3

This estimate, made from ages given by recall, is necessarily approximate; however, none of the girls between 12 and 14 who were examined clinically, had passed the menarche. Moreover, median and modal ages at menarche were 15 years for sub-groups aged 15 to 24, and 25 to 39 at the time of inquiry, hence the inclusion in this series of women for whom the event was not recent did not alter the estimated median age at menarche. Wilson and Sutherland (1953) conclude that in tropical countries the onset of menstruation as compared with that for English children, may be either early or late. Tanner (1955) notes that if climate has an effect on age at menarche, it must be a minor one, and that at present the effect of race cannot be disentangled from nutritional and socio-economic circumstances. Basing his judgment on the effects on men of famine associated with war, and on results of direct experiments on animals, Tanner expresses the conviction that nutrition plays a major role in determining the age at which menarche and the adolescent spurt in growth occur. If this view is correct, the relatively late median age of menarche in Bang Chan may be associated with inferior nutritional status.

One of 17 women in the age group 35-44 had passed the menopause, whereas 12 of 16 women over 45 years of age had done so. One of 7 women over 55 years of age, 2 of 7 women age 50-54, and one of 2 women age 45-49 had not yet reached the menopause. The reported ages at menopause were: 30-34 years, 2 women; 40-44 years, 3 women; 45-49 years, 3 women and 50-54, 5 women.

Approximately 100 respondents gave information concerning

BANG CHAN

duration and regularity of menstrual periods, and intervals between periods (Table 12).

Table 12

Characteristics of Menstrual Periods of Women in Bang Chan

	Percentage of Respondents in Each Category			
Duration, days	Under 3	3 or 3+ (a)	4 or 4+ (a)	5 or more
91 respondents	6	78	11	5
Interval	**Short**	**Usual (b)**	**Long**	
101 respondents	0	84	16	
Regularity		**Regular**	**Irregular**	
102 respondents		89	11	

(a) A plus sign indicates variability of period, as 3-4 days.

(b) usual - approximately 1 lunar month.

While the usual variations were encountered, a large majority of responses were similar. Thus the typical woman in Bang Chan menstruated at regular intervals of about 1 lunar month, for a period of approximately 3 days. While the sample is small, the only unusual feature of menstrual history as compared to western standards appears to be a somewhat older age at menarche.

892 Pregnancies. - Most married women in Bang Chan have children. The range in number of pregnancies for a given number of years of marriage is great, however (Table 13), and suggests either 1) relatively low fertility in many cases, or 2) the existence of some method of birth control of which the research workers, including the Thai physician, had no information. Zimmerman (1931, p. 230) has commented that in Thailand the birth rate did not seem to be under human control. He said that rural Thai did not know about birth control nor practice any form of it to any extent.

A/A [see p. 32-Analyst]

BANG CHAN

125 specimens. In all, specimens were obtained from 189 or 81% of
126 the children and of these 32% were negative. In 128 stools
164 containing parasites, 196 infecting organisms were found, or an average of 1.5 per infected child. Protozoa and helminths which are pathogenic or which may cause severe diarrhea were identified 126 times, and harmless forms 70 times. Of the harmful forms, Ascaris lumbricoides was found in 96 or 51% of the stool samples, Giardia lamblia in 19, or 10%, and hookworm, Endamoeba histolytica, Trichuris trichiura and Diphyllobothrium in 2% or less. Of the harmless forms noted, Endamoeba coli was found in 45 specimens or 24%, Iodamoeba williamsi in 21 or 11%, Endolimax nana and Chilomastix mesnili each in less than 2%. Doubtless the extent of intestinal parasitism in these school children was greater than the figures indicate, since some cases would be missed in examination of single stool specimens collected in this way. One might expect intestinal parasitism to be relatively common, also, among other family members.

125 Bowel Habits. - In connection with the clinical survey,
147 persons examined were asked whether they had "constipation" or "diarrhea" frequently, occasionally, or never, i.e. not within
514 the past 6 months. As the physician phrased the questions concerning "constipation," the replies indicated whether the respondent had daily bowel movements ("never constipated"), or usually had a bowel movement each day ("occasionally constipated") or usually had longer intervals between bowel movements ("frequently constipated"). Replies are summarized in Table 17. A

126 Considering the inadequate sanitation in Bang Chan, and
147 the prevalence of intestinal parasitism, the fact that 3/4 of the persons questioned said they "never" had diarrhea, is worthy of note. Most persons who reported having diarrhea,
[146] were troubled occasionally rather than frequently. The fact that nearly 2/5 of those questioned had bowel movements less often than once a day, is not surprising in view of the fact that diets which are relatively low in fibrous foods and in the B complex vitamins frequently result in sluggish behavior of the large intestine. That approximately 3/5 of the respondents in Bang Chan usually had a daily bowel movement is perhaps more noteworthy. Even in areas where diets tend to be much more liberal, some persons usually have bowel movements at intervals of 2 or 3 days or even longer. If such persons have stools of normal character and experience no discomfort, this bowel habit may be considered normal for them.

A [see p. 43 - Analyst]

5: Hauck et al. D-5 (1952-1954) 1956 AO7 Central Thai AO7

BANG CHAN

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Table 17

Bowel Habits of Persons Questioned in Bang Chan, Thailand, 1952-53

Group	Number of Persons Reporting	Frequency of Bowel Movements			Frequency[1] of Diarrhea		
		Daily	Usually 1/day	Usually longer intervals	F	O	N
		%	%	%	%	%	%
Random Sample of village Households	158	57	11	32	2	19	79
Primary school children	233	53	3	44	2	26	72
Total respondents	375[2]	54	7	39	2	23	75

1. F - Frequent; once a week or oftener.
O - occasional; less often than once a week.
N - never; not within the past 6 months

2. Primary school children in random sample counted once only. Information not obtained in a few instances.